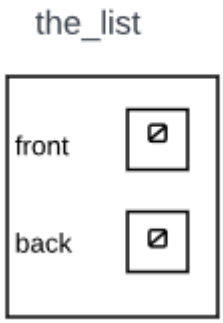
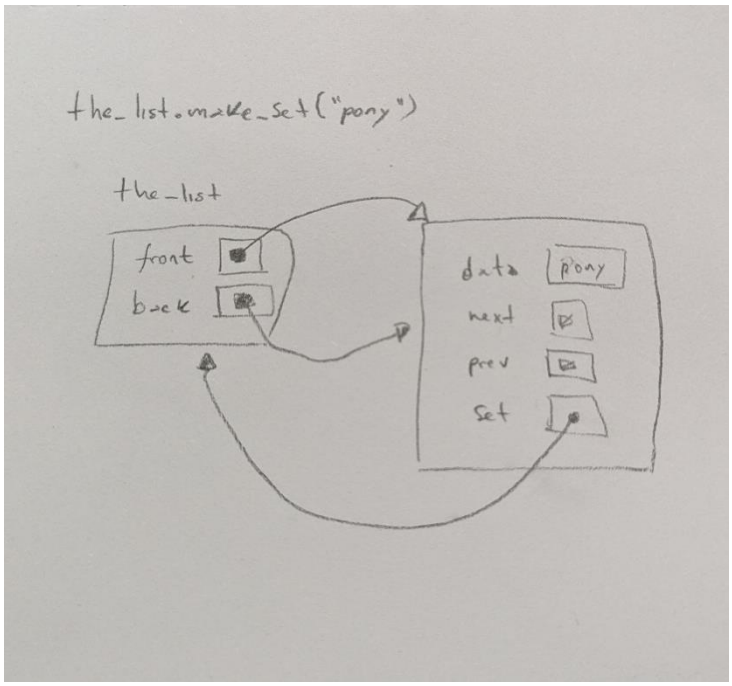
What does the following function call do to this object?
What does the function return?

```
the_list.make_set("pony")
```

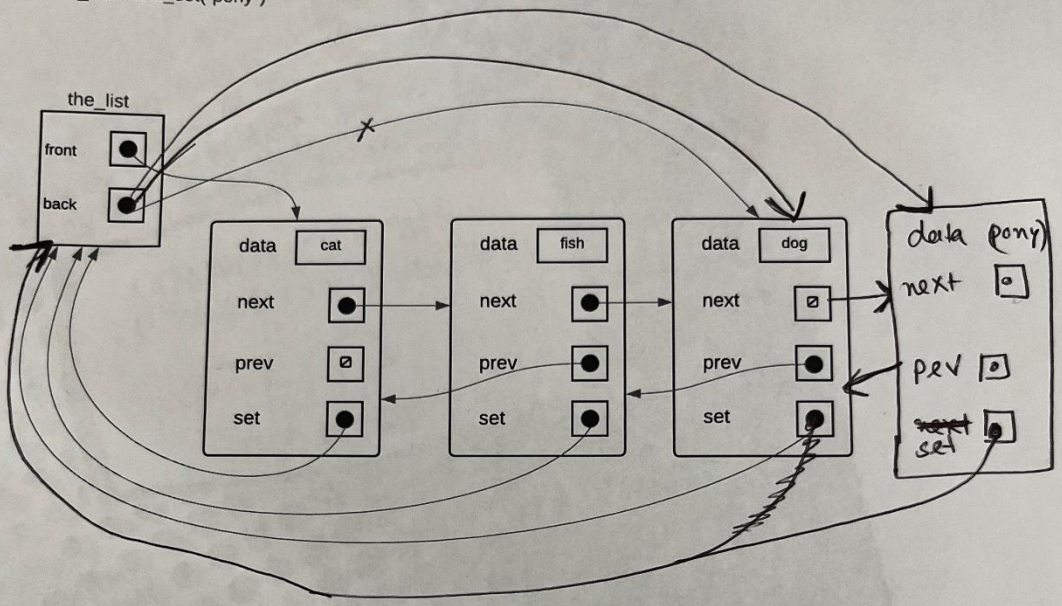




The_list is an empty list, where we set the data “pony”. This is achieve thanks to the function make_set which create a node whose data node is equal to “pony”, the back and front are referred to this new node.

What does the following function call do to this object?
What does the function return?

the_list.make_set("pony")



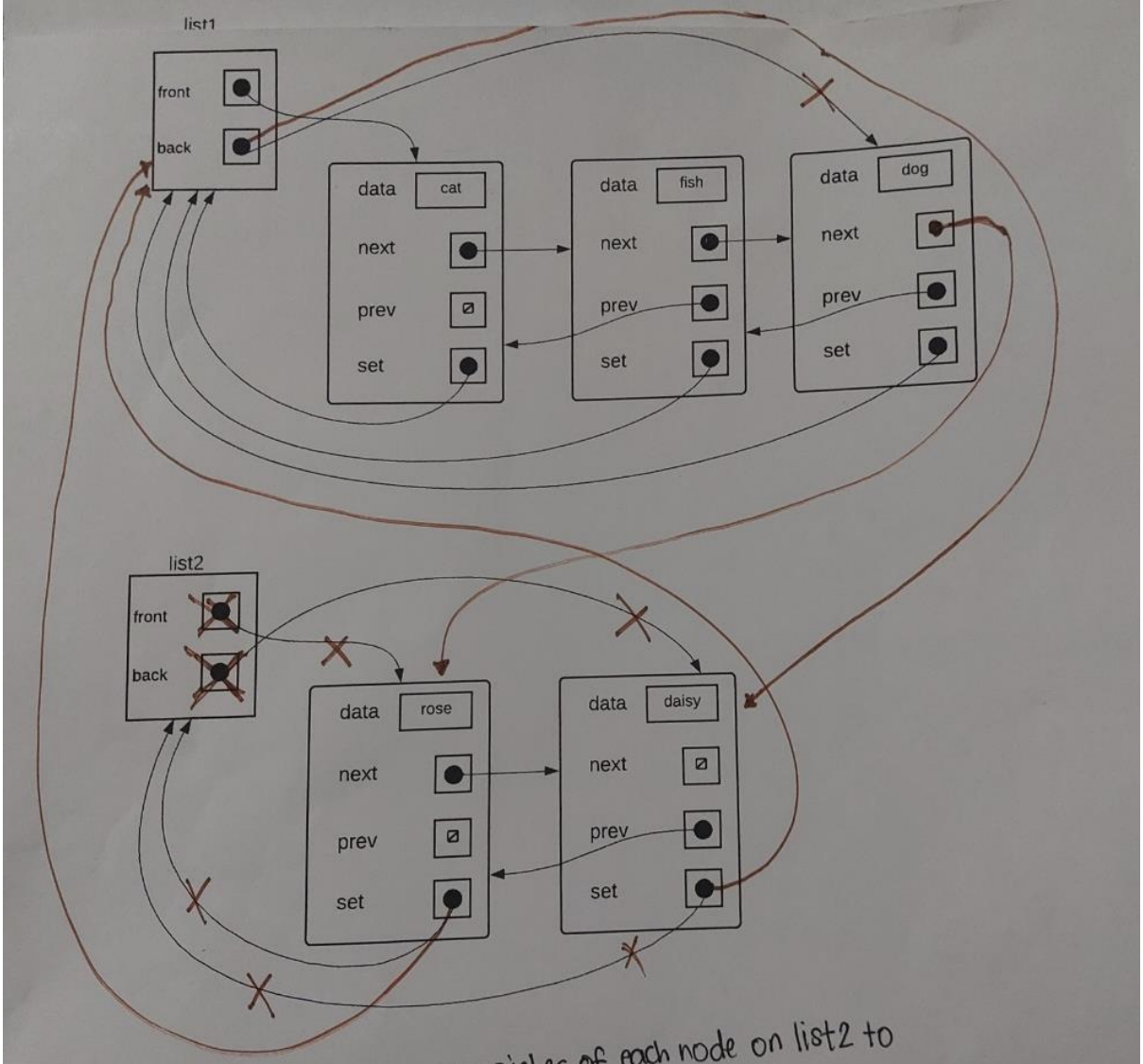
* make_set searches the 'data' attributes of nodes
of obj if matching data found
returns false

if no matching data found
① new node is created with 'pony'.

What does the following function call do to these objects?
What does the function return?

Number of elements transferred = length of list2

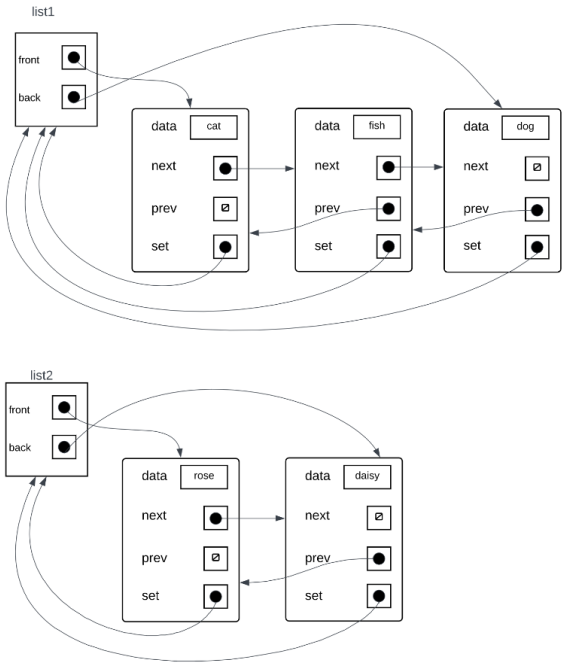
list1.union_set(list2)



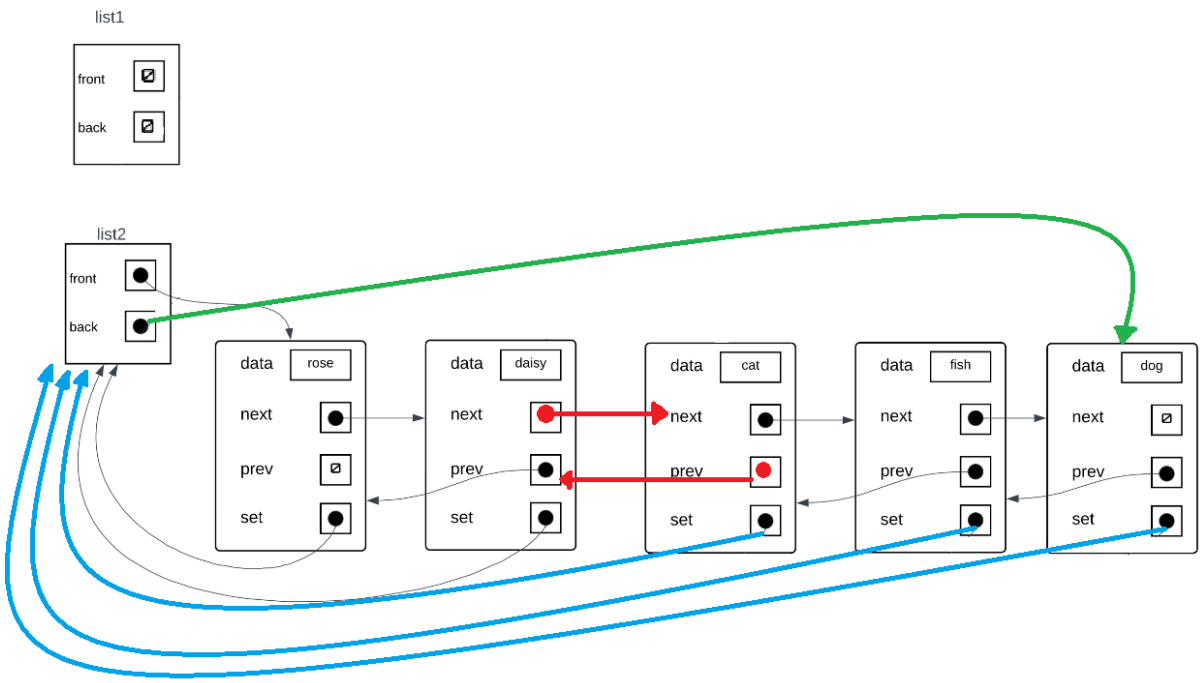
- Change where set pointer of each node on list2 to point on list1 and execute the following:
- list1.back.next = list2.front (Connect the last node of list1 to the front node of list2)
  list1.back = list2.back
  list2.front = None
  list2.back = None (Make list2 point to nothing to empty the list)

What does the following function call do to these objects?
What does the function return?

list2.union_set(list1)



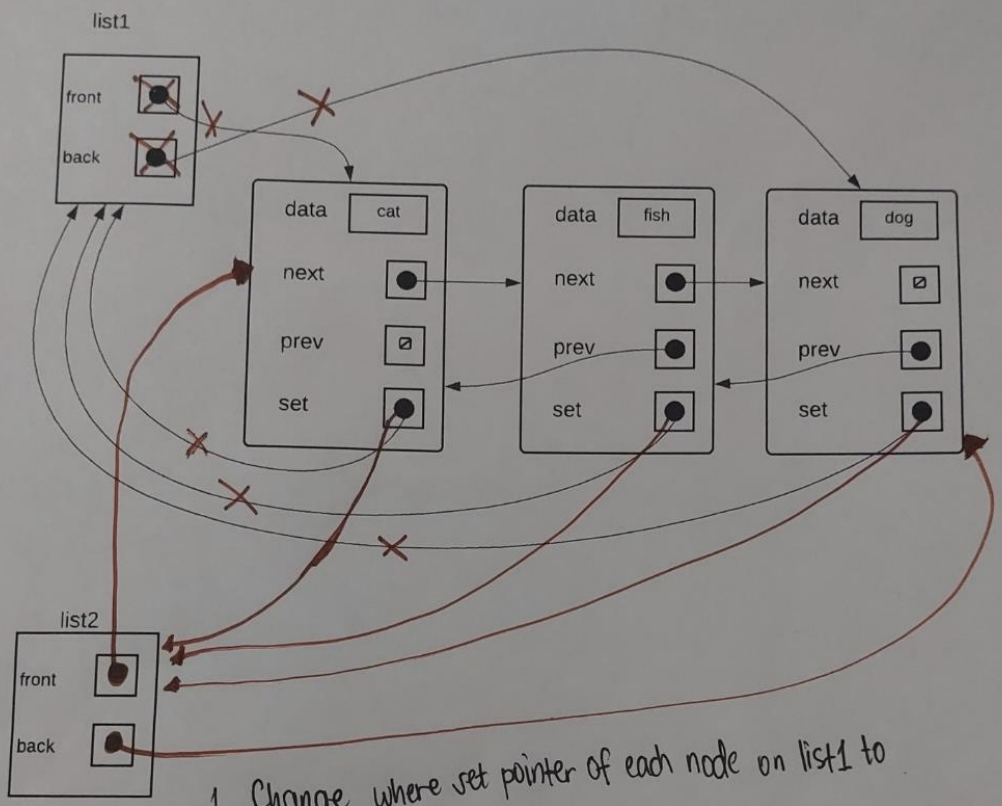
list2.union_set(list1)



The function union_set allow merge the list1 with list2. So, the elements from list1 will add it to the end of the list2, as show in the diagram. In this process the function set all the elements from list1 from list2. The back list2 attribute will point to the last elements from list1 (green line), and the next attribute of back of list 2 will start pointing towards front of list1 and “prev” attribute of front of list1 will start pointing towards back of list2. To finally, set all the elements of list 1 in list2, these transfers of data result on an empty state of list1, union_set will return number of nodes transferred from list1.

What does the following function call do to these objects?
What does the function return? Number of elements transferred = length of list 1

list2.union_set(list1)

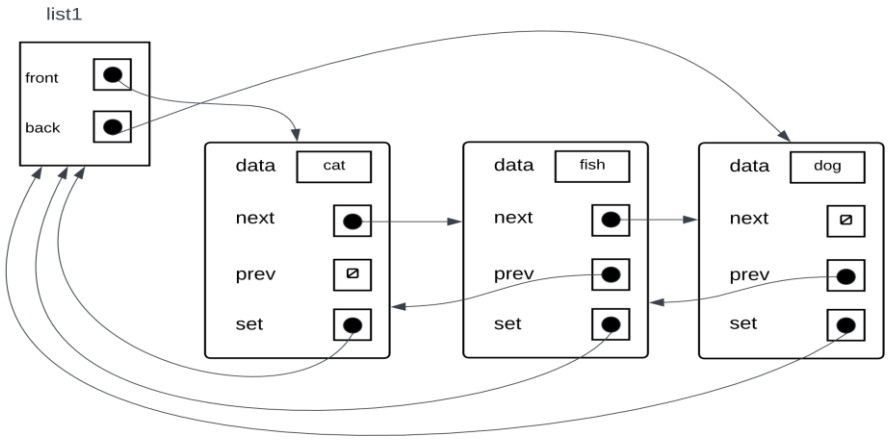


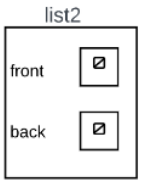
1. Change where set pointer of each node on list1 to point on list2
2. These steps are executed:

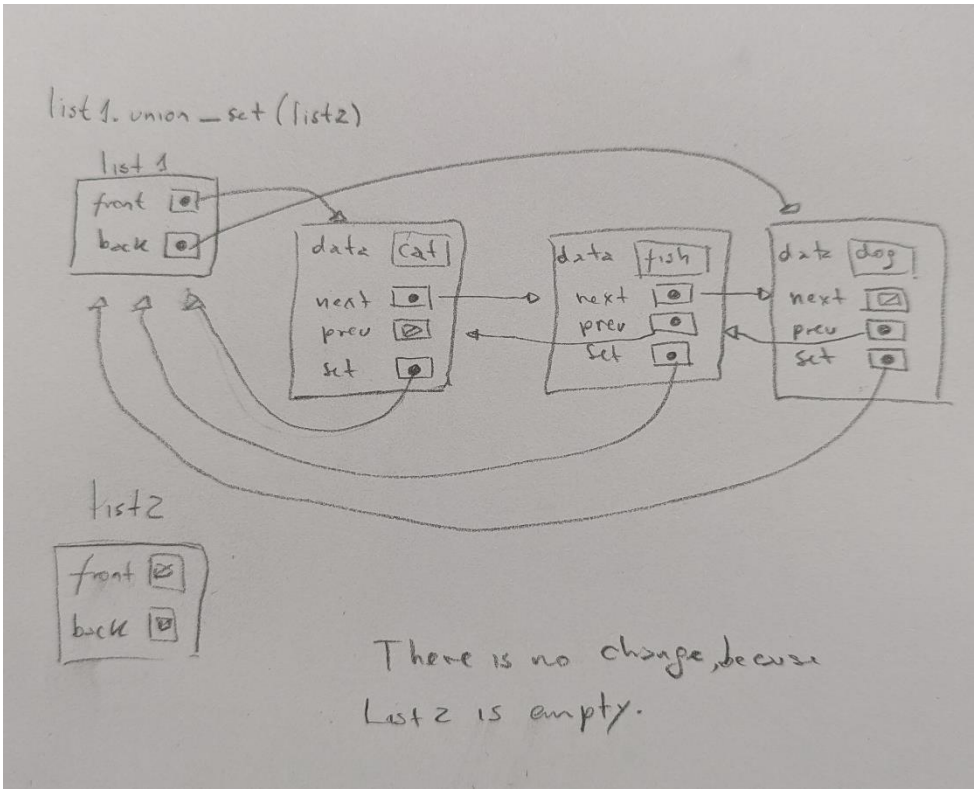
```
list2.front = list1.front
list2.back = list1.back
list1.front = None
list1.back = None
```

What does the following function call do to these objects?
What does the function return?

list1.union_set(list2)

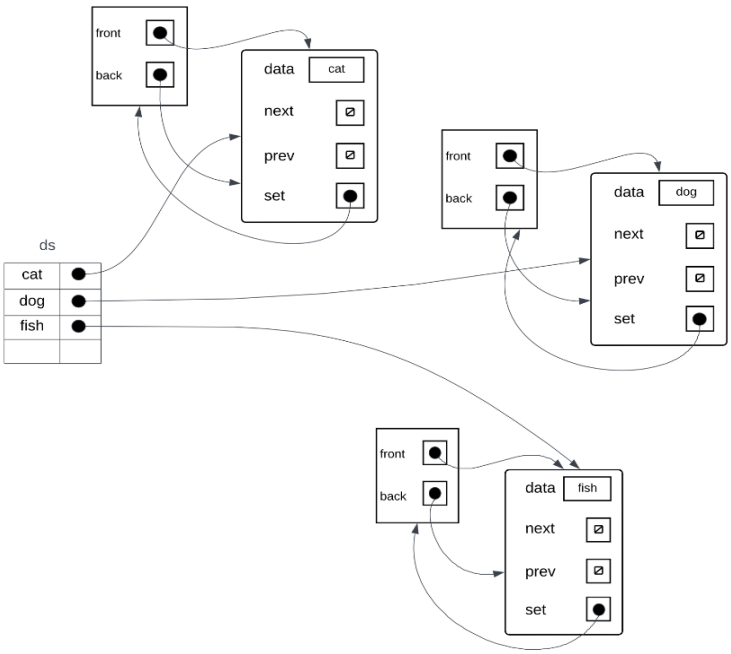


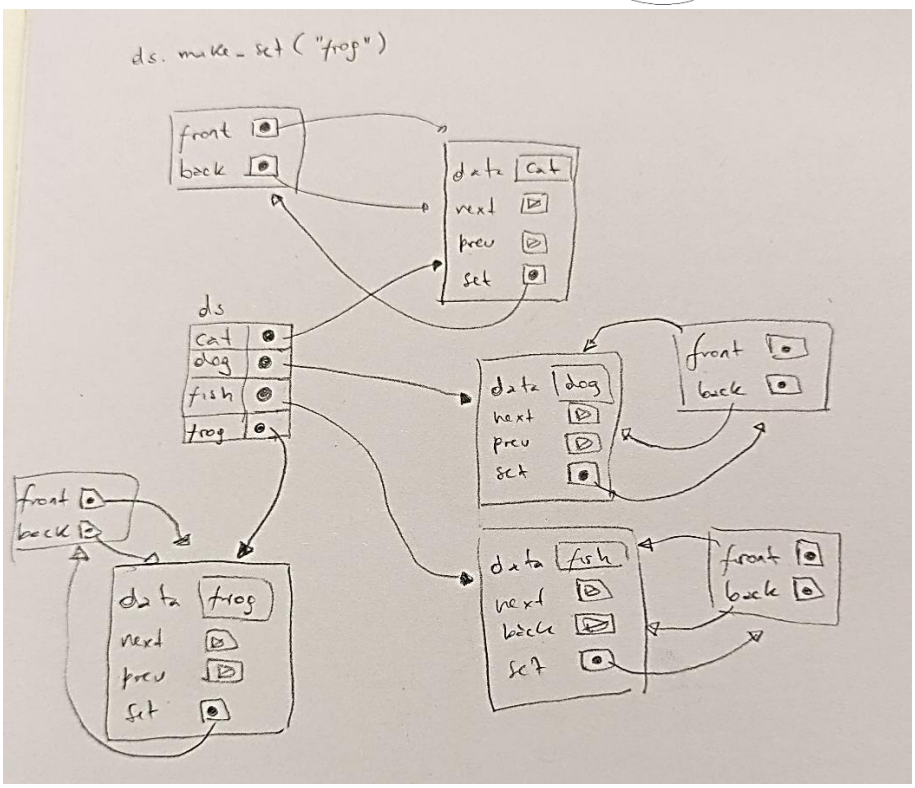




What does the following function call do to these objects?
What does the function return?

ds.make_set("frog")

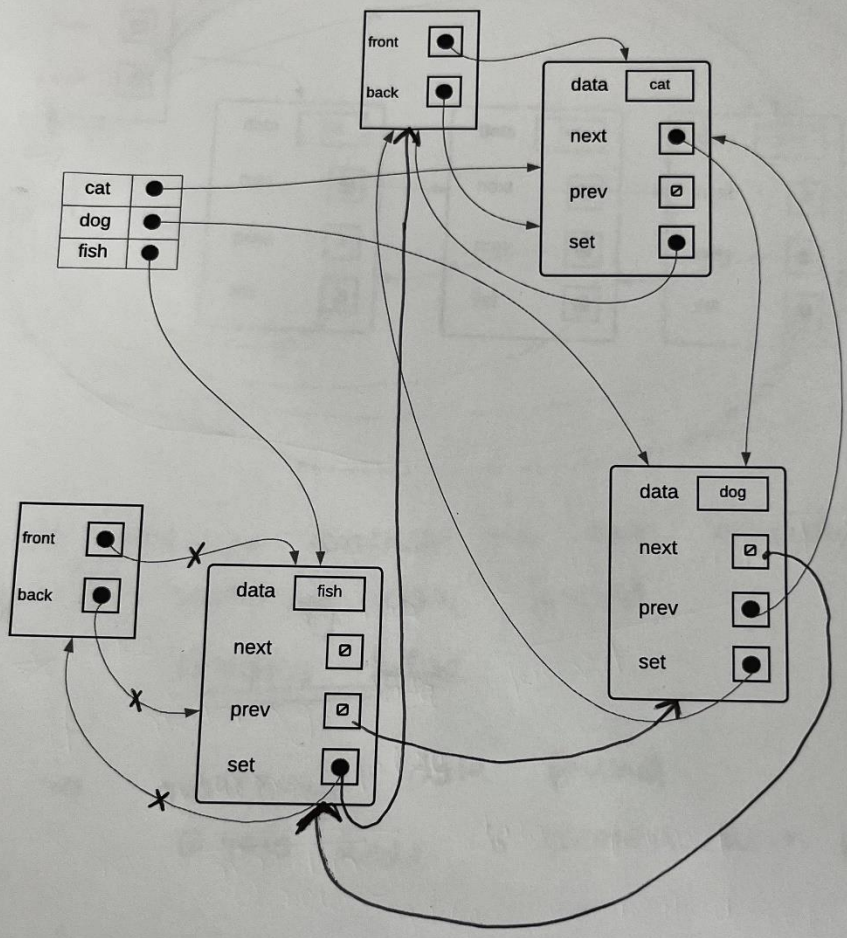




First, make_set() check if there is a “frog” key in dictionary “ds”, if it does will return false. Otherwise, a new object will be created with a new node in it with “frog” data. Then, a new key is created in “ds” dictionary to “frog”, this will be pointing to newly created node, and make_set() will return true.

What does the following function call do to these objects?
What does the function return?

ds.union_set("fish","dog")



★ unionset checks fish and dog are included in dictionary or not, if no, return false.

★ Since set with element dog is larger than sets with element fish, union_set() will cause node with fish to point in direction of dog's representative. Returning (TRUE)